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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NGUYEN, KEVIN M	

ART UNIT	PAPER NUMBER
2674	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/909,865	KAGAWA ET AL.	
	Examiner	Art Unit	
	Kevin M. Nguyen	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is made in response to applicant's amendment/argument filed on 10/11/2005. Claims 1-40 are currently pending in the application. Applicant's arguments, filed 10/11/2005, with respect to the rejection(s)of claim(s) 1-40 under the statutory basis for the previous rejection have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art references.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Deguchi et al (previously cited, US 6,480,202) hereinafter Deguchi.

4. As to claims 1 and 21, Deguchi teaches an alternative embodiment of an image display device (see Fig. 16), comprising:

a black correction part [a black isolation evaluating section 712, see fig. 16] performing a black correction processing of correcting a black reproducibility of an image data, to output black-corrected data [when the color reproduction characteristics of the monitor or when the black level is isolated due to the setting of the monitor in

terms of contrast and brightness, see col. 21, lines 53-55 and col. 22, lines 1-13] containing a predetermined number of color data [the appearance of colors is held unchanged if the image being displayed by it under set of predetermined operation conditions, see col. 14, lines 41-45];

an image display means [the monitor is a CRT, see Fig. 6] performing an image display on a predetermined screen based solely on said black-corrected image data [the alternative embodiment of Fig. 16 expressly shows if it determines that the monitor is a CRT, the operation proceed to step 45, where the TRC model selecting section 715 selects the simple model or the GOG model out of the models listed in Table 1 below that contains the simple model, see col. 25, lines 18-22]. Thus, the simple model corresponds to the solely black-corrected image data as claimed;

said black correction part [the black isolation evaluating section 712, see fig. 16] including:

a black-display characteristic specifying means performing a predetermined characteristic black-display specifying data related to a characteristic in operation to specify a displaying black with said image display means [note that a GUI as shown in Fig. 10 may be displayed on the monitor 103 to input the viewing environment information in place of inputting the information on ambient light (viewing information) obtained by the photosensors, see col. 7, lines 59-62];

a black-approximated data calculating means [an additional law evaluating section 713, see Fig. 16] calculating a black-approximated data [If it is

determined that the law of addition does not hold true in Step S46, the operation proceeds to Step S50, where the user determines to generate either a 3xN matrix or a three-dimensional look-up table. Then, the matrix preparing section 721 actually prepares a 3xN matrix or a three-dimensional look up table between the quantities of light (r, g, b) for RGB and the XYZ3-stimulus values, see fig. 17, col. 26, lines 42-48] composed of said predetermined number of color data and related to at least one of luminance, chromaticity and tristimulus values in displaying black [the ambient input section 101 detect information on ambient light (in term of the CIE/xy chromaticity and illuminance of ambient light), see col. 7, lines 52-54] based on said characteristic displaying black with said image display means on the basis of said black-display characteristic specifying data [on the basis of (r, g, b, l, rg, gb, br, rgb) as shown in equation (57) below, see col. 26, lines 49-63]. Thus, the RGB, the XYZ3-stimulus values, the CIE/xy chromaticity and illuminance correspond to the luminance, the chromaticity and the tristimulus values as claimed;

and a black-correction processing executing means [an image processing section 100, see Fig. 16] executing said black correction processing to said image data in units of said predetermined number color data based on said black-approximated data [If, for example, it is determined that a 3x8 matrix is to be prepared, a 3x8 matrix for generating (X_{CRT}, Y_{CRT}, Z_{CRT}) will actually be generated on the basis of (r, g, b, l, rg, gb, br, rgb) as shown in equation (57) below, see col. 26, lines 49-63] to output said black-corrected image data [the

monitor 103 is fed with image data (RBG data) that have been processed by the profile stored in the memory section 104 and then outputs and displayed the supplied image data, see col. 7, lines 26-30].

As to claims 2 and 22, Deguchi teaches the image display device according to claims 1 and 21, wherein said black-correction processing executing means includes a black correction means performing a subtraction processing of subtracting black-approximated data from said image data in units of said predetermined number of color data, to output said black-corrected image data a subtraction data [Note that the operation of generating a 3x4 matrix using the equation of (51) may be replaced by an operation of generating a 3x3 matrix using the equation of (58) as shown below, converting the values of (r''', g''', b''') representing the quantities of light that are non-linearly corrected by the TRCs by means of the 3x3 matrix and then adding the XYZ3-stimulus values for the digital signals of (0, 0, 0). See Equation (58), see col. 28, lines 48-62].

As to claims 3 and 23, Deguchi teaches the image display device according to claims 1 and 21, wherein said subtraction data includes said black-approximated data itself [note that equation (4) above is based on the assumption that the measured values of the colors of the monitor can be expressed as the quality of light emitted by the monitor itself, see col. 8, lines 40-43].

As to claims 4 and 24, Deguchi teaches the image display device according to claims 1 and 21, wherein said black correction means includes: subtraction means subtracting said black-approximated data from said image data in units of said

predetermined number of color data [Note that the operation of generating a 3x4 matrix using the equation of (51) may be replaced by an operation of generating a 3x3 matrix using the equation of (58) as shown below, converting the values of (r''', g''', b''') representing the quantities of light that are non-linearly corrected by the TRCs by means of the 3x3 matrix and then adding the XYZ3-stimulus values for the digital signals of (0, 0, 0). See Equation (58), see col. 28, lines 48-62];

a limiter setting a color data of less than zero in said predetermined number of color data contained in said data after subtraction to zero, to obtain said black-corrected image data obtain data [Thus, the mixing ratio (h_r, h_g, h_b) of the colors can be obtained by solving the equation (24) above. Then, CIE/XYZ values can be obtained from the values of r, g, b that are obtained through normalization using the maximum brightness values of R, G, B and equation (25) generated by using the mixing ratio. See Equation (25), where $0<r, g, b<1$ and $0<Y_{CRT}<1$, see col. 13, lines 55-67]. Thus, $0<r, g, b<1$ and $0<Y_{CRT}<1$ correspond to the limiter as claimed.

As to claims 5 and 25, Deguchi teaches the image display device according to claim 2, wherein said black correction means includes: a subtraction data calculating means calculating said black-approximated data itself as said subtraction data when said image data is larger than a predetermined value; and a subtraction means subtracting said subtraction data from said image data in units of said predetermined number of color data, to obtain data after subtraction, and outputting said data after subtraction as said black-corrected image data [a black correction means 100 including subtracting the XYZ3-stimulus values when the XYZ3-stimulus values is larger than the

input digital signals of (0,0,0) and outputting said data after subtraction as the black-corrected image data, see col. 27, line 41. Note that the operation of generating a 3x4 matrix using the equation of (51) may be replaced by an operation of generating a 3x3 matrix using the equation of (58) as shown below, converting the values of (r''', g''', b''') representing the quantities of light that are non-linearly corrected by the TRCs by means of the 3x3 matrix and then adding the XYZ3-stimulus values for the digital signals of (0, 0, 0). See Equation (58), see col. 28, lines 48-62].

As to claims 6 and 26, Deguchi teaches the image display device according to claim 5, wherein said subtraction data calculating means includes a subtraction data calculating means multiplying said black-approximated data with a multiplication factor of less than "1", when said image data is less than said predetermined value, to obtain said subtraction data [Note that the operation of generating a 3x4 matrix using the equation of (51) may be replaced by an operation of generating a 3x3 matrix using the equation of (58) as shown below, converting the values of (r''', g''', b''') representing the quantities of light that are non-linearly corrected by the TRCs by means of the 3x3 matrix and then adding the XYZ3-stimulus values for the digital signals of (0, 0, 0). See Equation (58), see col. 28, lines 48-62. Thus, the mixing ratio (h_r, h_g, h_b) of the colors can be obtained by solving the equation (24) above. Then, CIE/XYZ values can be obtained from the values of r, g, b that are obtained through normalization using the maximum brightness values of R, G, B and equation (25) generated by using the mixing ratio. See Equation (25), where $0<r, g, b<1$ and $0<Y_{CRT}<1$, see col. 13, lines 55-67].

As to claims 7 and 27, Deguchi teaches the image display device according to claims 1 and 21, wherein said black-correction processing executing means includes: a look-up table storing a table data; and a table data writing means, writing data in the form of a table capable of deriving one of said black-corrected image data from said image data as said table data, into said look-up table based on said black-approximated data, said look-up table obtains said black-corrected image data based on said image data by referring to said table data [if on the other hand, that the law of addition does not hold true in Step S55, the operation moves to step S50, where the matrix preparing section 721 uses the 3-stimulus values obtained by measuring several displayed colors of the monitor recommended by the IEC to generate coefficient for a 3xN matrix by linear recurrence or a three-dimensional loop-up table between the quantities of light for RGB (r''',b''') and XYZ3-stimulus values, see figure 17, col. 27, lines 47-54].

As to claims 8 and 28, Deguchi teaches the image display device according to claims 1 and 21, wherein said black-display characteristic specifying data includes data indicating a characteristic of a reflected light of external light on the surface of said predetermined screen of said image display means [note that a GUI as shown in Fig. 10 may be displayed on the monitor 103 to input the viewing environment information in place of inputting the information on ambient light (viewing information) obtained by the photosensors, see col. 7, lines 59-62].

As to claims 9, 10, 29 and 30, Deguchi teaches the image display device according to claim 8, wherein said black-approximated data calculating means includes a black-approximated data calculating means obtaining a specified value of luminance

of a reflected light of external light based on said black-display characteristic specifying data, and calculating said black-approximated data such that a difference between the luminance of the color displayed on said image display means based on said black-approximated data and the luminance in displaying black with said image display means is equal to said specified value [it will be determined that the black isolation needs to be corrected. Then, the processing operation proceeds to Step S52, where the TRC model selecting section 715 determines if the monitor is a CRT or not. If the monitor is a CRT, the operation proceeds to Step S54, where the TRC model selecting section 715 selects the GOGO model and the TRC preparing section 722 determines the parameters for the GOGO model by means of a non-linear optimization technique, using the data obtained by subtracting the XYZ3-stimulus values for input digital signals of (0, 0, 0) from the XYZ3-stimulus values for the numerical tone of each of the three colors of RGB and then also determines three TRCs as shown in equation (47), see col. 27, lines 3-14].

As to claims 11-15 and 31-35, Deguchi teaches the image display device according to claim 8, wherein said characteristic of a reflected light of external light includes a brightness of the reflected light of external light, and said black-approximated data calculating means includes a black-approximated data calculating means calculating said black-approximated data based on said black-display characteristic specifying data by referring to a chromaticity data indicating a ratio of tristimulus values of a reflected light of external light and a correlation between a color data and tristimulus values in said image display means [the brightness, the kind of an external light, and the

color temperature, the luminance (Y) (see figure 10), the chromaticity value and the mixing ratio (h'r, h'g, h'b) that provides a reference white point for the maximal quantities of light of R, G and B, see figure column 13, lines 12-38].

As to claims 16 and 26, Deguchi et al teach the image display device according to claims 1 and 21, wherein said black-display characteristic specifying data includes data indicating a characteristic in displaying black with said image display means [the black-display characteristic specifying data including a characteristic, luminance, chromaticity and tristimulus in displaying black with the monitor surface, see figure 16].

As to claims 17, 18, 37 and 38, Deguchi teaches the image display device according to claim 16, wherein said black-approximated data calculating means includes a black-approximated data calculating means obtaining a specified value of luminance in displaying black based on said black-display characteristic specifying data, and calculating said black-approximated data such that a difference between the luminance of the color displayed on said image display means based on said black-approximated data and the luminance in displaying black with said image display means is equal to said specified value [it will be determined that the black isolation needs to be corrected. Then, the processing operation proceeds to Step S52, where the TRC model selecting section 715 determines if the monitor is a CRT or not. If the monitor is a CRT, the operation proceeds to Step S54, where the TRC model selecting section 715 selects the GOGO model and the TRC preparing section 722 determines the parameters for the GOGO model by means of a non-linear optimization technique, using the data obtained by subtracting the XYZ3-stimulus values for input digital signals

of (0, 0, 0) from the XYZ3-stimulus values for the numerical tone of each of the three colors of RGB and then also determines three TRCs as shown in equation (47), see col. 27, lines 3-14].

As to claims 19, 20, 39 and 40, Deguchi teaches the image display device according to claim 16, wherein said characteristic in displaying black includes a brightness in displaying black, and said black-approximated data calculating means includes a black-approximated data calculating means calculating said black-approximated data based on said black-display characteristic specifying data by referring to tristimulus values in displaying black in the absence of external light, a ratio of tristimulus values of a reflected light of external light, and a chromaticity data indicating a correlation between a color data and tristimulus values in said image display means. the brightness, and the luminance (Y) (see figure 10), the chromaticity value and the mixing ratio (h'r, h'g, h'b) that provides a reference white point for the maximal quantities of light of R, G and B, see figure column 13, lines 12-38].

Response to Arguments

5. Applicant's arguments with respect to claims 1-40 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Nguyen whose telephone number is 571-272-7697. The examiner can normally be reached on MON-THU from 8:00-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick N. Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the Patent Application Information Retrieval system, see http://portal.uspto.gov/external/portal/pair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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KMN
November 4, 2005

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